

Benno M. Nigg, Dr.sc.nat., Dr.h.c.mult.

Human Performance Laboratory
Faculty of Kinesiology
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SYNOPSIS:

Born in Switzerland, Dr. Nigg studied Nuclear Physics at the ETH Zurich (Switzerland). In 1971, he started in Biomechanics. In 1976, he became the Director of the Biomechanics Laboratory at the ETH Zurich. In 1981 Dr. Nigg accepted an invitation to move to the University of Calgary, where he founded and developed the Human Performance Laboratory, a multi-disciplinary Research Center concentrating on the study of the human body and its locomotion. At the time of his retirement in 2014, this research center had about 180 co-workers, working with micro- and macroscopic approaches on the understanding of movement, exercise and sport.

Dr. Nigg has received many awards and recognitions, including the Olympic Order, honorary degrees from the Universities of Salzburg and Innsbruck, an honorary professorship from the Shanghai University of Sport and the highest award of the International Society of Biomechanics, ISB, the Muybridge Award.

Dr. Nigg's research concentrates on human locomotion with main emphasis on mobility and longevity and its application to movement related products such as orthoses, shoe insoles, sport shoes, sport surfaces and sport equipment. Dr. Nigg has collaborated with many major sport shoe and sport surface companies. Dr. Nigg's world-wide reputation as a top biomechanist is documented by his h-factor of 84 and his 18038 citations (Google scholar, January 2017).

Dr. Nigg's involvement with high performance sport is illustrated by the fact that many different national team athletes are consistently monitored in his HPL in Calgary.

PERSONAL AND PROFESSIONAL HISTORY:

1945-1950	Elementary School in Zürich.
1950-1958	Gymnasium (High School) Final Examination: "Maturität A".
1958-1959	Military service.
1959-1965	Study of Physics at the Swiss Federal Institute of Technology (ETH), Switzerland, and the Technical University, Hannover, West Germany. Final Examination: "Diploma in Experimental Physics" at the ETH Zürich, Switzerland.
1965-1971	Instructor for Physics and Mathematics at the Lyceum Alpinum Zuoz, Switzerland.
1971-1976	Research Director at the Biomechanics Laboratory of the ETH Zürich.
1975	Dr.sc.nat., ETH Zürich.
1976	Visiting Fellow: The Pennsylvania State University, U.S.A.
1976-1981	Director: Biomechanics Laboratory, ETH Zürich.
1981-ongoing	Professor of Biomechanics at the University of Calgary. Joint appointment in the Faculties of Kinesiology, Engineering, and Medicine.
1981-ongoing	Director of the Human Performance Laboratory at the University of Calgary.
1987-1994	Associate Dean (Research), Faculty of Kinesiology
2004	Dr. h.c. from the University of Salzburg, Austria
2008	Dr. h.c. from the University of Innsbruck, Austria
2014	Retirement and appointment as Professor Emeritus at the University of Calgary

AWARDS AND SPECIAL ACHIEVEMENTS:

1963	Exchange scholarship award (to TH Hannover) from ETH Zürich, Switzerland
1976	Ken Petak Memorial Lecture, The Pennsylvania State University, Pennsylvania, USA
1979-1987	Council Member, International Society of Biomechanics, ISB
1983-ongoing	Corresponding Fellow, AAPHE
1983-1985	President, International Society of Biomechanics, ISB
1984	Sports Medicine, All Star Team, Runner's World
1984-2014	Appointed member, IOC Science and Medical Commission
1986	Michael Jäger Award German-Austrian-Swiss Soc. Orth. & Sports Traumatology, GOTS, Munich
1989	Wartenweiler Memorial Lecturer, ISB Congress, UCLA, Los Angeles, USA
1989	Clinical Biomechanics Award, ISB Congress, UCLA, Los Angeles, USA: (Morlock and Nigg)
1991	Winner of the Novel Award, Vienna, Austria. (Nigg and Cole)
1992	Nathaniel Gould Foot and Ankle Lecturer, University of Vermont, Burlington, Vermont
1993	Winner of the Alberta Science and Technology (ASTech) Award
1993-ongoing	Appointed member of "The Club of Cologne"
1993	Distinguished Service Award United States Tennis Court and Track Builders Association
1994-2003	Chair: Selection Committee IOC-Olympic Prize, a 500,000 \$US research award
1995	Clinical Biom. Award, ISB Conf. Jyväskylä, Finland (Cole, Nigg, Gerritsen, van den Bogert)
1997	Teaching Excellence Award, Faculty of Kinesiology
1997	Plenary Session Lecturer. World Congress of Biomechanics, Sapporo, Japan
1998	Fellow of the International Academy for Medical and Biological Engineering
1998	Charter Member and co-chair: Olympic Academy of Science
1998	Teaching Excellence Award, Faculty of Kinesiology (Honorable Mention)
1999	Guest of Honour German-Austrian-Swiss Soc. Orth. & Sports Traumatology, GOTS, Munich
1999	The Wood Distinguished Lecturer in Joint Injury Research, Calgary, Canada
2000	Novel Millennium Award, Munich (Nurse & Nigg)
2000	VP Research Award, University of Calgary
2002	Elected Fellow: Canadian Society for Biomechanics
2002	Career Award: Canadian Society for Biomechanics
2002	Honorary Member, Canadian Chiropractic Association
2003	Award of Excellence in Research, Faculty of Kinesiology, University of Calgary
2003	University Professorship Award, University of Calgary
2003	Distinguished Faculty Achievement Award, University of Calgary
2003	Special Achievement Award – Health and Wellness, University of Calgary
2003-ongoing	Elected Corresponding Fellow: Swiss Academy of Medical Science
2003-ongoing	Appointed member, IOC Medical Commission, Subcommission Science and Medicine
2004	Geoffrey Dyson Award, International Society of Biomechanics in Sports
2004	Dr. h.c., Honorary Doctorate Degree from the University of Salzburg, Austria
2005	Honorary Fellowship ISBS (Int. Soc. Sports Biomechanics)
2005	Honorary Membership ISB (Int. Soc. Biomechanics)
2007	Jim Hay Memorial Award, ASB, Stanford, California
2007	Young Investigator Award, hon. mentioning, 4 th ICSS Congress, St. Christoph, Austria (Federolf)
2007	Young Investigator Award 2 nd place, GOTS Munich, Germany (Jason Cheung)
2007	Honorary Professorship, Shanghai University of Sport
2008	Dr. h.c., Honorary Doctorate Degree from the University of Innsbruck, Austria

2009-2013	Appointed member Board of Management of the Alberta Economic Development Authority (AEDA)
2011	Inducted into The Calgary Marathon Society Hall of Fame
2013	Muybridge Medal, for Outstanding Achievements in Biomechanics, International Society of Biomechanics
2013	Killam Research and Teaching Award, University of Calgary
2014	GREAT Supervisor Award. Faculty of Graduate Studies, University of Calgary

MEMBERSHIP AND FUNCTIONS IN NATIONAL AND INTERNATIONAL RESEARCH GROUPS:

1971-ongoing	Member, International Society of Biomechanics, ISB
1974	Member, Organising Committee of the 2 nd Int. Symposium on Biotelemetry, Davos, Switzerland
1974	Chair, Organising Committee of the Int. Biomech. Symposium, ETH Zürich
1976	Chair, Organising Committee of the Int. Biomech. Symposium, ETH Zürich
1976-1981	Member, Research Council of the Swiss Ski Federation (SSV)
1978	Chair, Organising Committee of the 1 st Int. Symposium on Sport Surfaces, ETH Zürich
1978-1979	Scientific Board, International Symposium "Man Under Vibration", Udine, Italy
1978-1981	Chair, Research Council of the Swiss Ski Federation
1979-1987	Council Member, International Society of Biomechanics
1980	Chair, Organising Committee of the 2 nd Int. Symposium on Sport Surfaces, ETH Zürich
1981-1983	President-elect, International Society of Biomechanics, ISB
1982-ongoing	Member, Canadian Society of Biomechanics
1982-ongoing	Member, American Society of Biomechanics
1982-1983	Advisory Board 9th International Congress of Biomechanics, Waterloo, Canada, 1983
1982-ongoing	Member, American College of Sports Medicine
1982-1985	Grant Review Committee - Health and Welfare Canada
1982-2004	Member, Board of the Helmholtz Institute for Biomedical Engineering, TH Aachen, West Germany
1982-1984	Advisory Board 4th European Congress of Biomech., ESB, Davos, Switzerland, 1984
1983	Chair, International Symposium of Sport Shoes and Playing Surfaces, Calgary, 1983
1983-1989	Member, CASS (Can. Ass. Sports Sciences)
1983-1985	Advisory Board 10th Int. Congress of Biomechanics, Sweden, 1985, Umeå, Sweden
1987	Chair, International Symposium on Sport Surfaces, Calgary, 1987
1987-1989	Organizing Committee, 1 st IOC World Congress on Sport Sciences, Colorado, USA, 1989
1987-1990	Steering Committee, 1 st World Congress on Biomechanics in San Diego, USA, 1990
1987-1988	Chair, International Symposium on Sport Surfaces, Calgary, 1988
1988-ongoing	Member Orthopaedic Research Society
1990-1991	Organising Committee, 2nd IOC World Congress on Sport Sciences, Barcelona, 1991
1990-1994	Steering Committee, 2nd World Congress on Biomech., Amsterdam, The Netherlands, 1994
1992-1993	Chair, International Symposium on Sport Surfaces, Calgary, 1993
1992-1994	Organising Committee, Congress Canadian Society of Biomechanics, Calgary, 1994
1991-1995	Organising Committee, 3rd IOC World Congress on Sport Sciences, Atlanta, 1995
1994-1998	International Advisory Committee, 3rd World Congress of Biomech., Sapporo,

	Japan, 1998
1994-ongoing	Council Member, World Council on Biomechanics
1996-1999	Chair, 17 th Congress of the Int. Society of Biomech., 1999, Calgary, Canada
1997-2002	Chair: 4 th World Congress of Biomechanics, 2002, Calgary, Canada
1998-2002	Member of Canadian Chiropractic Association Research Committee (CCA)
2002-2006	Member, Organizing Committee, 5 th World Congress of Biomechanics

EDITORIAL BOARDS

1983-1989	Editorial Board of the International Journal of Sports Biomechanics
1986-1994	Editorial Board of Advisors, Rebus, Inc., New York
1988-2004	Editorial Board, J. Biomechanics
1990-1996	Editorial Board, Clinical Journal of Sports Medicine
1994-ongoing	Co-editor in Chief for the Journal Sportverletzung-Sportschaden
1995	Editorial Board, Clinical Biomechanics
1995-ongoing	Editorial Board (Mitglied des Redaktionskollegiums), Leistungssport
1996-2005	Advisory Board, Journal of Sports Sciences
2000-2004	Editorial Board, <i>Int. J. Applied Sports Sciences</i>
2000-ongoing	Editorial Board, <i>Brazilian J. Biomechanics</i>
2000-2003	Editorial Board, <i>J. of the Am. Podiatric Medical Association, JAPMA</i>
2005-ongoing	Editorial Board, <i>Orthopädische Zeitschriften</i>
2008-ongoing	Editorial Board, Footwear Science
2010-ongoing	Board member: Center for Sport Science and Sport Medicine Berlin (CSSB)
2012-ongoing	Editorial Board, ISRN Biomedical Engineering

REFeree FOR JOURNAL PAPERS AND GRANT APPLICATIONS:

J1	Journal of Biomechanics
J2	Journal of Biomechanical Engineering
J3	Journal of Biomedical Engineering
J4	Journal of Biomechanics of Sports
J5	Medicine and Science in Sports and Exercise
J6	Journal Clinical Biomechanics
J7	Research Quarterly for Exercise and Sport
J8	Canadian Journal of Applied Sport Science
J9	Sportwissenschaft
J10	Leistungssport
J11	Jugend und Sport
J12	Sports Medicine
J13	Journal of Applied Biomechanics
J14	Journal of Orthopaedic Research
J15	Acta Physiologica Scandinavica
J16	Journal of Orthopaedic Research
J17	British Journal of Sports Medicine
J18	Gerontology
J19	Journal of Orthopaedic Research
J20	Footwear Science
G1	MRC Medical Research Council of Canada/CIHR
G2	NSERC Natural Science and Engineering Research Council Canada
G3	AHFMR Alberta Heritage Foundation for Medical Research
G4	Health and Welfare Canada
G5	Swiss National Foundation for Research
G6	Austrian Centennial Funds
G7	Fitness and Lifestyle Canada

VISITING RESEARCHERS AND SCHOLARS (1 month or more):

1971	Nelson, R.C. Pennsylvania State University, USA
1975	Komi, P. University of Jyväskylä, Finland
1978	Abrantes, J. University of Lisbon, Portugal
1978	Hay, J.G. University of Iowa, USA, (1 year sabbatical leave)
1978	Komor, A. University of Warschau, Poland
1978	Koerndle, H. University of Oldenburg, West Germany
1978	Robson, K.W. State College, Victoria, Australia
1979	Kaufmann, D. University of Florida, USA
1979	Morawski, J. University of Warschau, Poland.
1979	Kulig, K. University of Wroclaw, Poland
1983	Grant, M. University of Western Australia, Perth, Australia
1983	Unold, E. ETH, Zürich, Switzerland
1984	Miyashita, M. University of Tokyo, Japan
1985	Miyashita, M. University of Tokyo, Japan.
1987	Yoshihuku, Y. Chubu University, Japan
1988	Schamhardt, H. Utrecht University, The Netherlands
1990	Yeadon, M.R. University of Loughborough, UK
1990	Nachbauer, W. University of Innsbruck
1990	Zatsiorsky, V. Central Institute of Physical Culture, Moscow
1990	Yeadon, M.R. University of Loughborough, UK
1991	Oakes, B. University of Melbourne, Australia
1992	Hintermann, B. University of Basel, Switzerland
1993-1994	Sasaki, R. Keio University, Yokohama, Japan
1995-1996	Müller, C. Spital Bruderholz, Basel, Switzerland
1997-1999	von Tschärner, V. Swiss National Foundation, Bern, Switzerland.
1997	Siegler, S. Drexler Univ. Philadelphia, USA.
1998	Schöllhorn, W., Univ. Leipzig, Germany
1998-1999	Schwameder, H. Univ. Salzburg, Austria
1998	Wilson, A. University of London, UK
1999	Müller, E. University of Salzburg, Austria
1999	O'Connor, J. Oxford University, UK
2000	Valdarabano, V. University of Basel, Switzerland
2001-2002	Kornecki, S. Academy of Phys. Ed. Poland
2002-2003	Won, YD. Chosun University, South Korea
2002-2003	Tak, Gye-Rae, South Korea
2003	Hay, J. New Zealand, Sabbatical stay
2006	Patria Hume, New Zealand
2009	Ulrich Hartmann, Germany

POST-DOCTORAL FELLOWS:

1	1976-1979	Denoth, J.	The influence of the effective mass on the magnitude of impact forces in the tibia-femoral joint. Career: Dozent for Biomechanics at the ETH Zürich, Switzerland.
2	1979-1981	Neukomm, P.A.	Development of an 8-channel telemetry system for biomechanical measurement. 1981-1990 VP Research at Neukomm AG, Switzerland. Career: Dozent for Biotelemetry at the ETH Zürich, Switzerland.
3	1979-1980	Schneider, E.	Computer supported diagnosis system for on line analysis of performance in rowing. Career: Director, AO-Institute, Davos, Switzerland and Professor for Biomechanics, University of Basel, Switzerland.
4	1980-1981	Proctor, P.	Assessment of the effect of specific drugs on changes in the

- gait pattern of subjects with partial rupture of the lateral-collateral ligaments of the ankle. Currently: VP Research and Development at Howmedica International, Pfizer Hospital Products Ltd. Staines, Middlesex, U.K.
- 5 1980-1981 Kunz, H.R. Long-term effect of training programmes on the performance of decathlonists. Career: Director, national coaching program of Switzerland.
 - 6 1985-1987 Herzog, W. The use of biomechanical gait analysis to quantify effects of conservative treatment of injuries. Currently: Professor for Biomechanics, Co-Director Human Performance Laboratory, University of Calgary, Calgary, Canada.
 - 7 1986-1988 de Boer, R. Biomechanical analysis of speed-skating. Currently: Senior Research Associate, Phillips Medical Systems, Da Best, Netherlands.
 - 8 1987-1988 Skarvan, G. The influence of the ligaments of the AJC on the movement between foot and leg. Currently: Orthopaedic Surgeon, Kantonsspital Basel, Switzerland.
 - 9 1988-1990 Bobbert, M. Development of a mathematical model for the quantification of forces acting on the tibia. Currently: Professor for Biomechanics, Free University of Amsterdam, the Netherlands.
 - 10 1989-1990 Grimston, S. Effect of physical activity on bone morphology. Currently: Principal of Grimston research, St. Louis, USA
 - 11 1989-1990 Pitkin, M. Shoe and foot biomechanics. Currently: Founder and president of Poly-Orth International, Sharon, MA, USA.
 - 12 1990-1991 Vithal, I. Energy consideration in sport shoes. Currently: Research Consultant Ambulatory Footwear, Hamilton, Ontario, Canada.
 - 13 1990-1991 Nachbauer, W. Movement transfer between foot and leg during running. Currently: University Professor and Dean, University of Innsbruck, Austria.
 - 14 1991-1993 van den Bogert, T. Modeling and simulation of internal forces in the lower extremities during physical activities. Currently: Endowed Chair and Professor for Biomechanics, Cleveland State University, Cleveland, USA.
 - 15 1991-1993 de Koning, J. Lower extremity impact forces. Currently: Professor for Biomechanics at the Free University of Amsterdam, the Netherlands.
 - 16 1991-1992 Hintermann, B. Movement transfer between foot and leg in vitro. Currently: Chief Orthopaedic Surgeon, Kantonsspital Liestal, Switzerland.
 - 17 1991-1992 Sommer, Ch. The influence of ligaments on the movement transfer between foot and leg. Currently: Orthopaedic Surgeon, Luzern, Switzerland.
 - 18 1994-1994 Hume, P. The influence of foot morphology on the movement transfer between foot and ankle in vivo. Currently: Professor, Director Institute of Sport and Recreation Research New Zealand, School of Sport and Recreation, AUT University, Auckland.
 - 19 1994-1996 Kim, S.J. The influence of ankle ligaments on the movement transfer between foot and leg in vivo. Currently: Professor of Biomechanics, Hanseo University, South Korea.
 - 20 1994-1995 Stähelin, T. Ankle joint morphology and function under special consideration of ligaments and muscle tendon units. Currently: Orthopaedic Surgeon, Hospital Ilanz, Switzerland.

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| 21 | 1995-1995 | Schöllhorn, W. | Integral movement characterization using neural input. Currently: Full Professor (C4) and Chair of the Faculty at the University of Mainz, Germany. |
| 22 | 1995-1996 | Müller, C. | Ankle joint integrity with and without ligaments. Currently: Chief Orthop. Surgeon at the provincial hospital Bruderholz, Basel, Switzerland. |
| 23 | 1995-1996 | Cole, G. | A simulation model for the human foot and shoe. Currently: Senior Research Engineer, ASA Canada. |
| 24 | 1996-1997 | Stefanyshyn, D. | Mechanical energy contribution of the lower extremity joints to athletic performance. Currently: Associate Professor, University of Calgary, Canada. Founder and CEO of Sports Insight, Consulting Company. |
| 25 | 1996-1997 | Sasse, M. | Effect of fibular reconstruction on movement and movement coupling in the ankle joint complex, an in vitro study. Currently: Executive Director, Head of UBS Global Asset Management Saudi Arabia. |
| 26 | 1996-1999 | Liu, W. | Stability of the ankle joint complex. Currently: Research Associate, Boston University, USA. |
| 27 | 1998-1998 | Dixon, S. | Shoe inserts and anthropometrical, anatomical, functional and senso-motoric characteristics. Currently: Senior Lecturer for Biomechanics, University of Exeter, UK. |
| 28 | 1998-1999 | Schwameder, H. | Joint loading with and without hiking poles. Currently: Professor of Biomechanics, University of Salzburg, Austria. |
| 29 | 1998-2000 | Baroud, G. | Finite element modeling of foot, shoe and playing surface. Currently: Full Professor, McGill University, Montreal, PQ, Canada. Canada Research Chair. |
| 30 | 1999-2000 | Merian, M. | Control of the ankle joint complex. Currently: Orthopaedic Surgeon. University Hospital Basel, Switzerland. |
| 31 | 1999-2003 | Wakeling, J. | Impact forces, soft tissue vibrations and muscle tuning. Currently, Full Professor, SFU Vancouver, BC, Canada. |
| 32 | 2000-2000 | Valderrabano, V. | Validation of the functional characteristics of a new ankle joint replacement. Currently: Orthopaedic surgeon. University Hospital Basel, Switzerland. Professor for Orthopaedics, University of Basel Switzerland. |
| 33 | 2003-2004 | Ferber, R. | Knee joint loading for various shoe intervention. Currently: Associate Professor, Nursing and Kinesiology, University of Calgary. President, Running Clinic, Calgary, Canada. |
| 34 | 2003-2005 | Tack, G-R. | Simulation of Human Movement with Physical Force Feedback and Development of a Foot Model for Simulating Human Movement. Currently: Biomedical Engineer, Konkuk University, Korea. |
| 35 | 2005-2005 | Barandun, M. | EMG analysis for rehabilitation. Currently: Orthopaedic surgeon, Kantonsspital Liestal, Switzerland. |
| 36 | 2003-2007 | de Vries, G. | Foot orthotics for acquired symptomatic flat foot condition. Currently: Orthopaedic surgeon, Halifax, Canada. |
| 37 | 2006-2008 | Cheung, J. | Finite Element Modelling of foot and shoe. Currently: VP Research, Li-Ning, China. |
| 38 | 2006-2011 | Federolf, P. | Soft tissue vibrations in sport activities; Unstable Shoes; Fatigue. Currently: Professor of Biomechanics, University of |

39	2007-2007	Kuni, B.	Innsbruck, Austria. Biomechanical analysis of clinical situations. Currently: Assistant MD, University Hospital, Heidelberg, Germany.
40	2007-2008	Landry, S.	Unstable shoes and small muscles. Currently: Assistant Professor, Acadia University, Canada.
41	2007-2010	Stirling, L.	Fatigue in locomotion. Currently: Product Performance Engineer at Garmin International, Cochrane, AB, Canada.
42	2007-2008	Lee, Y.	Shock absorption during running. Currently: Research Fellow, Kyung Hee University, South Korea.
43	2008-2008	KleinHorsman, M.	Cushioning guidelines as a function of age and gender. Currently: Now Group Lead, Function Development Shaving at Philips Consumer Lifestyle, The Netherlands.
44	2008-2009	Sigg, A.	Cushioning Design Guidelines. Currently: Orthopaedic Surgeon, Switzerland.
45	2008-2009	Gerin-Lajoie, M.	Cushioning shoe design guidelines. Currently: Developer of a Healthy Living Center, Quebec, PQ, Canada.
46	2010-2012	Maurer, C.	Fatigue during locomotion. Currently: VP Research Red Bull Salzburg Austria.
47	2011-2012	Whitting, J.	Weight and Performance. Compression and muscle function. Currently Assistant Professor for Biomechanics, Australia
48	2011-2012	Kuntze, G.	Multi-Muscle-Pattern. Currently: Research Associate, University of Calgary, Canada.
49	2013-2015	Trudeau, M.	Determination of performance related variables using data mining. Currently: Biomechanics Research Engineer, Brooks, Seattle, USA.
50	2013-2015	Buckeridge, E.	Ice-Hockey biomechanics to improve hockey skates. Currently: Biomechanics Research Engineer, Lululemon, Vancouver, Canada.
51	2013-2015	Bauman, J.	Proof of concept for foot pressure transfer to low back. Currently: Assistant Professor of Health and Exercise Science at Truman State University, USA.
52	2015-	Asmussen, M.	Resonance in treadmill running.
53	2015-2016	Smith, A.	Ice-Hockey biomechanics to improve hockey skates.
54	2014-2015	Raso, V.	Energetic considerations for walking footwear.
55	2016-	Fletcher, J.	Training response of elite athletes using heart rate variability and low-frequency fatigue.
56	2016-	Lam, Chris	Pressure distribution to predict footwear preference.

PH.D. STUDENTS:

(Only principal supervisor listed, co-supervisions are not listed)

@ Recipients of a research award at international conferences during their graduate student time.

- 1 1976-1979 @Neukomm, P.A. Body-mounted antennas. The effect of the human body on the RF transmission of small body-mounted biotelemetry and portable radio antennas in the frequency range 10-1000 MHz and safety considerations. Career: Dozent (Associate Professor) for Biotelemetry at the ETH Zürich, Switzerland.
- 2 1975-1979 @Schneider, E. Biomechanische Analyse der Leistung im Zweier ohne Steuermann durch telemetrische Messungen während des Ruderns. (Biomechanical analysis of the performance in the pair rowing with the help of telemetric measurements). Career: Professor University of Basel, Switzerland and Director of the Research Institute AO in Davos, Switzerland.
- 3 1976-1980 Kunz, H.R. Leistungsbestimmende Faktoren im Zehnkampf (limiting factors in decathlon). Career: Director: National coaching program of Switzerland.
- 4 1979-1983 Luethi, S.M. Biomechanical analysis of short term pain and injuries in tennis. Career: Founder and president, i-generator, a product development consulting company, Portland Oregon, U.S.A.
- 5 1981-1986 @Schlöpfer, F. The application of the clinically used external spine fixator for the quantification of internal forces and moments. Career: Senior Research Associate with Stratec-Medical, Switzerland.
- 6 1982-1988 @Bahlsen, A.H. Etiology of running injuries, a longitudinal prospective study. Career: President, Bahlsen air-services, Nanton, Alberta, Canada.
- 7 1983-1989 Vermeulen, S. 3-D computer models for the biomechanical analysis of surface shapes. Currently: President of Vermeulen-Software, Calgary, Canada.
- 8 1986-1989 @@Morlock M. A generalized 3-D six-segment model of the ankle and the foot. Currently: Professor of Biomechanics, University of Hamburg, Germany.
- 9 1988-1994 @@@Ronsky, J. In vivo quantification of patello-femoral joint contact characteristics. Currently: Professor, Department of Mechanical Engineering at the University of Calgary. Recipient of an NSERC Woman's Fellowship. Canada Research Chair.
- 10 1989-1995 @@Cole, G. The effect of muscular activation on impact loading during locomotion - a simulation approach. Currently: Technology Innovation Director, Bioadvantage Inc., Alberta. Canada.
- 11 1991-1996 @Reinschmidt, C. Lower extremity kinematics during walking and running assessed with skin and bone mounted markers. Currently: CEO, Straumann, Switzerland.
- 12 1993-1996 @Stefanyshyn, D. Mechanical energy contribution of the lower extremity joints to athletic performance. Currently: Professor, Faculty of Kinesiology, University of Calgary, Canada.
- 13 1991-1996 Hamilton, G. Joint congruity and the congruous range of motion applied

- to displaced intra-articular calcaneal fractures. Currently: Co-owner of Games, a company developing and producing computer games.
- 14 1993-1997 @@Gerritsen, K. Neuro-motor control of gait - a simulation model. Currently: President, Semper Consulting, Calgary, Canada.
- 15 1994-1998 @Stacoff, A. Influence of shoe sole geometry and selected orthotics on movement coupling between foot and leg in running, an *in vivo* study. Career: Dozent for Biomechanics, ETH Zurich, Switzerland.
- 16 1995-1998 @Wright, I. 3-D dynamic modelling of ground contact in heel toe running. Currently: Senior Sport Scientist, Nike, Portland, USA.
- 17 1999- 2002 @@Hau, A Shoe inserts/orthotics and subject specific characteristics. Currently: CEO, Advanced Biomechanics Research Ltd., Germany. (Married name: Mündermann). Habilitated at the University of Konstanz, Germany.
- 18 1998-2003 @@Nurse, M. The influence of foot sensitivity and sensory feedback on the control of locomotion. Currently: Head, Nike Research Laboratory, Portland, Oregon, USA.
- 19 1997-2003 @Miller-Young, J. Foot, insert and shoe characteristics and their influence on locomotion. Currently: Instructor, Mount Royal College, Calgary, Canada.
- 20 2003-2005 @@@Valderrabano, V. Ankle Osteoarthritis – Biomechanical and Orthopaedic aspects. Currently: Orthopaedic surgeon in Orthopaedics, University Hospital Basel. Professor for Orthopaedics, University of Basel, Switzerland.
- 21 2002-2006 @@Boyer, K. Impact forces, soft tissue vibrations and muscle tuning. Currently: Assistant Professor, University of Massachusetts at Amherst, USA.
- 22 2007-2011 Coza, A. Effects of vibrations and compression on skeletal muscle contractile properties and physiology. Currently: Senior researcher with adidas, Portland USA.
- 23 2009-2010 @Eskofier, B. Application of pattern recognition methods in biomechanics. Currently: Assistant professor for Computer Sciences, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany.
- 24 2009-2013 Friesenbichler, B. Soft tissue vibrations and compression. Currently: Research Assistant, Schulthess Clinic, Switzerland
- 25 2011- @@Hörzer, S. Functional groups.
- 26 2011-2016 @@@Baltich, J. The effects of resistance strength training and functional strength training on risk factors for running injury. Currently: Research Engineer with New Balance, Boston USA.
- 27 2011-2015 @@@Enders, H. Muscles and movement control. Currently: Research Engineer, adidas Futures, Herzogenaurach, Germany.
- 28 2014- Mohr, M. Biomechanical analysis of the muscle coordination with

osteoarthritis.

SUPERVISION OF 'DIPLOMARBEIT' IN ZÜRICH AND MASTER'S THESES IN CALGARY:

ETH Zürich, Switzerland

A "Diplomarbeit" consisted of a research project of the duration of 6-12 months. The titles are a literal translation from German.

1	1972	Gerber, V.	Effect of a specific velocity training on the variation of the timing in dancing.
2	1972	Bucher, W.	The effect of arm and leg movement on the velocity in free-style swimming.
3	1972	Hegner, J.	The use of the board vibrations in diving. Experimental study with various divers.
4	1972	Röthlin, K.	Correlation between velocity, angle of attack and length of a throw in javelin.
5	1973	Neeser, K.	Correlation between two fitness tests and competition results in free-style swimming.
6	1973	Schneebeli, W.	Description of various assessment methods in diving from a biomechanical point of view.
7	1973	Schamaun, W.	Experimental analysis of long jump.
8	1973	Unold, E.	The effect of different surfaces and shoes on the acceleration on the human body in walking and running.
9	1973	Bless, U.	Biomechanical analysis in hurdling.
10	1973	Sturzenegger, H.	Limiting factors in gymnastics.
11	1973	Windmüller, R.	Acceleration measurements and assessment of impact forces in downhill skiing.
12	1974	Keller, R.	Biomechanical long jump analysis.
13	1974	Keller, P.	Biomechanical investigation of pole vaulting.
14	1974	Biber, T.	Limiting factors in high jump.
15	1974	Spirig, J.	Acceleration measurements in gymnastics.
16	1974	Gisler, E.	Biomechanical analysis of ski jumping.
17	1974	Juri, T.	Acceleration measurements in gymnastics and their connection with film analytic results.
18	1974	Dändliker, F.	Frequency analysis of the acceleration curves measured during human movement.
19	1974	Clematide	Acceleration measurements in horse riding.
20	1975	Grossmann, O.	Acceleration measurements during trampoline exercises.
21	1975	Kobach, M.	Development of a method to quantify the psychological and physiological preparation for competition.
22	1975	Ghelfi, P.	Correlation between the human microvibrations and the academic performance in different fields of learning.
23	1975	Aeschlimann	Biomechanical analysis of rotation during jumps in gymnastics.
24	1975	Bühler, M.	Acceleration measurements and the arm in connection with

			different tennis racquets.
25	1975	Wyss,C., Stocker, R.	Long and short term reliability of human microvibration measurements.
26	1975	Brandt, J.D.	Biomechanical analysis of rowing.
27	1976	Eberle, G., Frey, D.	Biomechanical analysis of the effect of shoe inserts on the kinetic and kinematic variables during running.
28	1976	Altdorfer, R.	Biomechanical analysis of the bully in ice hockey.
29	1976	Nuttli, P.	Human microvibrations and stutters.
30	1976	Angst, F.	Biomechanics of rowing.
31	1977	Weber, B.	Gait analysis of middle and long distance runners.
32	1977	Meier, K.	Biomechanical analysis of ski-jumping with special consideration of construction of ski-jumping hills.
33	1977	Richo, P.	The effect of tennis court surfaces on selected movement parameters and movement variables in tennis.
34	1977	Morell, F.	Selection criteria in rowing.
35	1978	Baumann, K.	Acceleration measurements during impact at heel landing on different hiking trails.
36	1978	Kalt, F.	Biomechanical analysis of movement pattern in connection with pain and injuries on the locomotive system.
37	1978	von Mentlen, R.	Test battery for limiting factors in ice hockey.
38	1978	Herzog, W.	The influence of velocity and playing surfaces on the load on the human body in running.
39	1979	Kälin, X.	Development of a biomechanical method to predict the performance in a somersault.
40	1979	Stricker, R.	Use of video methods to assess the quality of a somersault.
41	1979	Ferretti, J.	Effect of different training programs on the performance in somersault for various age groups.
42	1979	Zürcher, O.	Effect of taping on gait pattern of athletes.
43	1979	Guidon, H.W.	Kinetic analysis of the effect of sport shoe correction.
44	1979	Schneider, A.	Kinematic analysis of the effect of sport shoe corrections.
45	1979	Troxler, G.	Development of a force measuring system underneath the take-off in ski jumping.
46	1979	Rüegg, P.	Measurements of take-off forces in ski-jumping.
47	1979	Cassis, B.	Biomechanical analysis of movements in gymnastics.
48	1979	Rufener, V.	The influence of a selected training method on the performance in slalom.
49	1979	Lemm, R.	Impact forces and the effective mass during movement.
50	1979	Frey, E.	Human microvibration and social variables.
51	1980	Gossweiler, S.	The influence of footwear and injuries on the movement variables in walking.
52	1980	Spiess, U.	Pain and injuries in the lower extremities in tennis.
53	1980	Hasenfratz, U.	Pain and injuries in the upper extremities in tennis.
54	1980	Fisher, F.	Biomechanical analysis of different techniques at the beginning of a rowing stroke.
55	1980	Aeschlimann, S.	The influence of footwear and injuries on kinematic variables

			in walking and running.
56	1980	Bräm, H.	Force measurements in long jump.
57	1980	Furrer, S.	Kinetic variables and performance in the long jump.

University of Calgary, Canada

58	1991-1993	Chen, H.	Plantar pressure and shoe comfort.
59	1993-1996	Stergiou, P.	Kinematic and kinetic variables associated with the onset of patello-femoral pain syndrome. Currently: Biomechanical consultant, Calgary, Canada
60	1995-1997	Lee, S.	Forefoot movement during locomotion. Currently: Hospital for Special Surgery, Department of Biomechanics, New York, USA.
61	2001-2004	Toyoda, Y.	Functional Foot Orthotics for Patellofemoral Pain Syndrome. Currently: Research associate, Nike, Portland, USA.
62	2008-2010	Davis, E.	Reliability and sensitivity of basketball tests. Currently: Research associate, adidas, Portland, USA.
63	2008-2011	Tecante, K.	Stability and small muscles. Currently: Location unknown.
64	2011-2013	Vienneau, J.	Whole body vibration training and muscle activity. Currently: Research technician, University of Calgary, Canada.
65	2014-2014	Mohr, M.	Transferred into the PhD program December 2014
66	2014-	Comaduran, D.	EMG measurements.
67	2016-	Manz, S.	
68	2016-	Cigoja, S.	

PROFESSIONAL ASSISTANTS:

1	1976-1976	Brandt, D.	Film Analysis
2	1976-1980	Friedrich, R.	Electronics, computer
3	1976-1979	Luethi, S.	Film analysis, shoe research
4	1976-1978	Stacoff, A.	Film analysis, shoe research
5	1976-1976	Stocker, R.	Force analysis
6	1976-1981	Unold, E.	Computer, film analysis
7	1976-1977	Vollers, B.	Electronics
8	1976-1981	Waser, J.	Film analysis
9	1977-1978	Morell, F.	Film analysis
10	1977-1978	Unold, W.	Computer
11	1978-1981	Sägesser, A.	Electronics
12	1979-1981	Gerber, H.	System specialist, computer
13	1979-1980	Jetzer, M.	Film analysis
14	1979-1981	Tiegermann, V.	Electromyography, force analysis
15	1980-1981	Kälin, X.	Film analysis, shoe research
16	1980-1980	Siebenmann, D.	Gait simulation
17	1980-1981	Sudan, J.	Electronics, computer
18	1981-1999	Fisher, V.	Chief technician, film analysis

19	1981-1985	Beauchamp, L.	Exercise physiology, film analysis
20	1981-1981	Eugster, G.	Computer
21	1982-1985	Burrett, J.	Computer, electronics
22	1982-1985	Neil, R.	Film analysis, shoe research
23	1982-2012	Tory, B.	Computer
24	1982	Polishuk, D.	Computer
25	1985-1986	Beatty, R.	Electronics, computer
26	1985-1989	Sklyryk, B.	Computer, biomechanics
27	1986-	McNeil, G.	Computer, biomechanics
28	1987-	Stano, A.	Electronics
29	1987-1988	Abrahamse, S	Biomechanics
30	1987-1988	Flanagan, C.	Pressure distribution
31	1987-1990	Nilsen, K.	Biomechanics
32	1987-1989	Yeadon, L.	Library
33	1988-1996	Seifert, K.	Computer
34	1989-1994	Oldham, D.	Audio-visual
35	1990-1994	Read, L.	Biomechanics
36	1992-1993	Fraser, M.	Editing of publications
37	1993-1998	Turnbull, K.	Editorial functions
38	1994-1995	Kahn, A.	Biomechanics
39	1995-1995	Slotboom, A.	Computer, software
40	1996-1997	O'Flynn, B.	Experimental locomotion analysis
41	1996-1997	Hiebert, J.	Experimental locomotion analysis
42	1997-2001	Stergiou, P.	Experimental locomotion analysis
43	1997-1999	Frank, R.	General research assistant
44	1998-1999	Woepfel, D.	Graphic artist
45	1998-1999	Pittman, S.	Computer programmer
46	1999-2004	Palafox, J.	Graphic artist
47	2000-2001	Goepfert, B.	Biomechanics
48	2000-2001	Pascual, S	EMG
49	2001-2003	Rozitis, A.	Biomechanics
50	2002-2003	Boyer, K.	Vibrations
51	2002-2004	Anderson, B.	Research assistant
52	2003-2003	Smith, Clark	Research assistant
53	2004-2005	Fried, A.	Research assistant
54	2004-2005	Gormely, T.	Research assistant
55	2004-2005	McDougall, D.	Research assistant
56	2004-2009	Roeke, C.	Graphic artist
57	2005-2006	Smith, G.	Golf Lab
58	2006-2007	Coza, A.	Biomechanics
59	2007-2008	Kim, M.	Biomechanics
60	2009-2011	Baltich, J.	Biomechanics
61	2010-2011	Kilburn, S.	Biomechanics
62	2010-2012	Campbell, F.	Biomechanics
63	2013-2015	LeVangie, M.	Biomechanics

64	2014-	Vienneau, J.	Biomechanics
65	2014-2015	Fletcher, J.	Biomechanics

SUMMER STUDENTS / RESEARCH STUDENTSHIPS:

1	1983	Brown, H.	AHFMR
2	1983	Bahlsen, B.	NSERC
3	1983	Grant, M.	Industry
4	1984	Bahlsen, B.	NSERC
5	1984	Doige, L.	Industry
6	1984	Stokes, S.	NSERC
7	1984	White, L.	Industry
8	1985	Glover, R.	NSERC
9	1985	Flanagan, C.	Industry
10	1985	Volway, D.	Industry
11	1986	Read, L.	AHFMR
12	1986	Woo, H.	AHFMR
13	1987	Flanagan, C.	Industry
14	1988	Voyol, X.	NSERC
15	1988	Will, C.	Industry
16	1989	Fisher, C.	Industry
17	1989	Niven, J.	Industry
18	1990	Fisher, C.	STEP
19	1990	Rempel, D.	NSERC
20	1990	Graf, S.	Industry
21	1991	Fisher, C.	STEP
22	1992	Smith, G.	NSERC
23	1993	Smith, G.	NSERC
24	1993	Telang, L.	NSERC
25	1994	Vontobel, S.	Industry
26	1996	Harrigan, M.	Industry
27	1996	Bourgeois, S.	Industry
28	1996	Murphy, J.	Industry
29	1997	Nurse, M	Industry
30	1998	Strudsholm, L.	Industry
31	2000	Rozitis, A.	NSERC
32	2001	Anderson, B.	Industry
33	2001	Burnham, L.	Industry
34	2002	Shane, J.	NSERC
35	2003	McDougall, D.	Markin-Flanagan
36	2003	Noonan, K.	Industry
37	2003	Sargent, A.	Industry
38	2003	Weber, Ch.	Practicum
39	2004	Hintzen, S.	Practicum
40	2004	Jost, B.	Practicum
41	2004	Spielmann, Ch.	Practicum

42	2006	Goeckeritz, S.	Practicum
43	2006	Mattli, R.	Practicum
44	2006	Bouchet, B.	Practicum
45	2006-2007	Eisa, F.	Industry
46	2006-2007	Mills, R.	Industry
47	2006-2007	Fliri, L.	Practicum
48	2007-2008	Weber, T.	Internship
49	2007-2008	Tecante, K.	Internship
50	2008	Rohrbeck, M.	Internship
51	2008	Melvin, J.	Internship
52	2008	Meyer, M.	Internship
53	2008	Hansen, C.	Internship
54	2008	Friesenbichler, B.	Internship
55	2009	Becher, J.	Internship
56	2009	Luethi, A.	Practicum
57	2010	Alexander, N.	Internship
58	2010	Grin, L.	Internship
59	2010	Lipsky, M.	Internship
60	2010	Ojeda, J.	Internship
61	2010	Roos, L.	Internship
62	2010-2011	Frias Goyenchea, M.F.	Internship
63	2010-2011	Ruf, F.	Internship
64	2011	Enders, H.	Internship
65	2011	De Melker Worms, J.	Internship
66	2011-2012	Peters, M.	Internship
67	2011-2012	Sonza, A.	Internship
68	2011-2012	Lopes Atristain, R.	Internship
69	2012	Zoller, E.	Internship
70	2012	Häuptli, D.	Internship
71	2012	Schuster, B.	Internship
72	2012	Seubert, C.	Internship
73	2012	Ohlendorf, D.	Internship
74	2013	Bürgi, S.	Internship
75	2013	Lienhard, K.	Internship
76	2013	Haftner, T.	Internship
77	2013	Stetter, B.	Internship
78	2013	Mohr, M.	Internship
79	2013	Cuevas, A.	Internship
80	2013	Lyson, B.	Internship
81	2014	Bauer, M.	Internship
82	2014	Kaiser, Ch.	Internship
83	2014	Naan, M.	Internship
84	2014	Stetter, B.	Internship

85	2014	Krabbe, L.	Internship
86	2014	Thomas, K.	Internship
87	2015	Berger, L.	Internship
88	2015	Cigoja, S.	Internship
89	2015	Leibold, A.	Internship
90	2015	Mercur, C.	Internship
91	2015	Merklein, S.	Internship
92	2015	Pontarolo, L.	Internship
93	2015	Kaltenback, C.	Internship
94	2015	Blago, A.	Internship
95	2016	Mauracher, M.	Internship
96	2016	Mayerhofer, P.	Internship
97	2016	Meyer, C.	Internship
98	2016	Romero, J.	Internship
95	2017	Hoitz, F.	Internship
96	2017	Schoen, T.	Internship
97	2017	Martinez, A.	Internship

FINANCIAL SUPPORT:

The following list includes primarily research grants and industry support for applications and/or contracts where B. M. Nigg was the *principal applicant*.

1976 - 1981 (ETH Zürich)

Swiss National Foundation for Research
 Swiss Sport Research Foundation
 University Research Foundation (ETH)
 Adidas (Sport Shoe Company)
 Ciba Geigy (Chemical drugs)
 Hoffman-La Roche (Chemical Company)
 Nordika (Ski boots Company)
 Sandoz (Bioscience Company)

The calculation from Swiss Francs to \$Can was done using an exchange rate of 1.00 \$Can = 1.70 SFr. which was about the average exchange rate in 1980.

Total Sum (1976-1981) \$Can 960,000

1981 - 1991 (Calgary)

AHFMR Alberta Heritage Foundation for Medical Research
 Adidas (Sport Shoe Company)
 Chiropractic Foundation for Spinal Research
 Fitness Canada
 International Olympic Committee

MRC Medical Research Council	
NIKE (Sport Shoe Company)	
NSERC National Science & Engineering Research Council	
Physical Education (new building equipment grant)	
Porplastic (Sport Surfaces Company)	
Spartan (Sport Surfaces interest)	
Swiss National Foundation for Research	
Several small Industry contracts	
Total Sum (1981 -1991)	\$Can 2,668,100

1992 – present (Calgary)

1992	Support: Adidas, NSERC, SGO, IOC endowment, MAC, Victoria Games, Robbins Sport Surfaces, Grad. student and Post-Doctoral support	\$Can 496,660
1993	Adidas, NSERC, SGO, IOC endowment, MAC operating, Bauerfeind, Grad. Stud. support, Rollerblade, Summer students	\$Can 450,700
1994	NSERC, SGO, Can. Fitness and Lifestyle Inst., IOC endowment, MAC operating, MAC equipment, Bauerfeind, Olympic Oval Fund, Adidas, Grad. Stud. support, Post Doc. support, RJA surface testing McGill, NSERC summer studentship, Going global, AHFMR	\$Can 457,500
1995	NSERC, Can. Fitness and Lifestyle Inst., IOC endowment, MAC operating, MAC equipment, Olympic Oval Fund, Adidas, Grad. Stud. support, Post Doc. support, RJA surface testing	\$Can 220,000
1996	NSERC, IOC endowment, MAC operating, Adidas, Grad. Stud. support, Post Doc. support, Decathlon, Shering-Plough, Cenalta, Head, Mondo, Joh. Jakob Foundation	\$Can 360,000
1997	Grants: NSERC, Dept. Defence Canada, Swiss National Foundation, Johann Jakob Foundation, Industry: Adidas, Decathlon, Motion Analysis, Head, Endowment: IOC Endowment, Da Vinci (Engineered Air Donation)	\$Can 1,717,300
1998	Grants: NSERC, Dept. Defence Canada, Swiss National Foundation, Johann Jakob Foundation, Industry: Adidas, Decathlon, Motion Analysis, Head, Mondo Int., Wiley&Sons Endowment: IOC Endowment, Da Vinci (Engineered Air Donation)	\$Can 1,467,400
1999	Grants: NSERC, Dept. Defence Canada, SNF, Joh. Jakob Foundation, Industry: Adidas, Mizuno, Motion Analysis, Precarn Endowment: IOC Endowment, Da Vinci (Engineered Air	

	Donation)	\$Can 1,625,700
2000	Grants: NSERC, Dept. Defence Canada Industry: Adidas, Mizuno, Mondo, MAC, Taylor Made, Vanier Endowment: IOC Endowment, Da Vinci (Engineered Air Donation)	\$Can 535,050
2001	Grants: Dept. Defence Canada Industry: Adidas, Mondo, MAC, Taylor Made, 713254 Alberta Ltd. Endowment: IOC Endowment, Da Vinci (Engineered Air Donation)	\$Can 472,000
2002	Grants: Dept. Defence Canada Industry: Adidas, MAC, Taylor Made, Endowment: Da Vinci (Engineered Air Donation)	\$Can 412,500
2003	Grants: Dept. Defence, University Professorship, Am. Academy Pod. Sports Med. Industry: Adidas, MAC, BRI, Sport Court, Taylor Made Endowment: Da Vinci (Engineered Air Donation)	\$Can 326,242
2004	Industry: Taylor Made, Adidas, MAC, BRI, Gerflor, EMA, Robins, Nike, Masai Endowment: Da Vinci (Engineered Air Donation) Donation: Philanthropists (for building and da Vinci)	\$Can 500,219
2005	Grants: Univ. Professorship, Industry: Taylor Made, Adidas, MAC, BRI, EMA, Robins, Nike, Masai Endowment: da Vinci	\$Can 462,977
	Donations: Philanthropists (for building and da Vinci)	\$Can 1,935,000
2006	Grants: Univ. Professorship, Industry: Adidas, MBT, BRI, Robins, CT Edge Endowment: da Vinci	\$Can 315,910
	Donations: Philanthropists (for building and da Vinci)	\$Can 500,000
2007	Industry: Adidas, BRI, Decathlon, Masai, Endowment: da Vinci	\$Can 500,063
2008	Grants: NSERC, Collaborative Res. & Training Exp., AHFMR, Arthritis Research Industry: Adidas, BRI, Decathlon, Masai, Endowment: da Vinci	\$Can 485,900
2009	Industry: Adidas, BRI, Decathlon, Masai, Powerdisk, Endowment: da Vinci	\$Can 307,700
2010	Grants: NSERC, AHFMR, Arthritis Research Industry: Adidas, BRI, Decathlon, Masai, Specialized Bicycles, Zigtech Endowment: da Vinci	\$Can 359,442

2011	Grants: NSERC, AHFMR, Arthritis Research Industry: Adidas, BRI, Decathlon, Masai, Specialized Bicycles, Zigtech Endowment: da Vinci	\$Can 372,942
2012	Grants: NSERC, Arthritis Research Industry: adidas, BRI Endowment: da Vinci	\$Can 377,760
2013	Grants: NSERC CRD, NSERC Discovery Industry: BRI, Total Image Fitness, adidas, Mizuno, FitFlop, Reebok CCM Endowment: da Vinci	\$Can 531,979
2014	Grants: NSERC CRD, NSERC Discovery Industry: BRI, Total Image Fitness, adidas, Mizuno, FitFlop, Reebok CCM Endowment: da Vinci	\$Can 642,045
2015	Grants: NSERC CRD, NSERC Discovery Industry: BRI, adidas, MBT, FitFlop I & II, Reebok CCM Endowment: da Vinci	\$Can 442,137
2016	Grants: NSERC CRD, NSERC Discovery Industry: BRI, adidas, FitFlop, i-generator, Unisa	\$Can 354,838
Total since 1976		\$Can 24,274,659

INVITED LECTURES (INTERNATIONAL AND IMPORTANT NATIONAL):

In this section only the most important invited and keynote lectures are listed.

1974	Invited Lecture, University of Heidelberg, West Germany.
1975	Invited Lecture, IAKS -Conference, Köln, West Germany.
1976	K.L. Petak Memorial Lecture, The Pennsylvania State University, State College, Pennsylvania, U.S.A.
1977	Invited Lecture, International Academy for Leisure Time Sport Courts, Freiburg, West Germany.
1978	Lecture, Congress of the South German Society of Orthopaedics, Baden-Baden, West Germany.
1979	Keynote Lecture, 66th Annual Meeting of the West German Society of Orthopaedics, Basel, Switzerland. Keynote Lecture, 7th International Congress on Biomechanics, Warsaw, Poland. Keynote Lecture, Third International Symposium on Orthopaedics, Heidelberg, West Germany.
1980	Keynote Lecture, Annual Meeting of the West German Society of Sports Medicine, Kiel, West Germany. Invited Lecture, Int. Symposium on "The Child and the High Performance Sport," Magglingen, Switzerland.

- 1981 Keynote Lecture, Int. Gymnastic Society, Tübingen, Germany.
Keynote Lecture, 8th International Congress on Biomechanics, Nagoya, Japan.
Australian Sport Biom. Lecture Tour, 14 lectures in Perth, Melbourne, Sydney, Brisbane, Wollongong.
Keynote Lecture. 5th Annual Conference of the American Society of Biomechanics, Cleveland, Ohio.
- 1982 Keynote Lecture, 3rd Meeting of the European Society of Biomechanics, Nijmegen, The Netherlands.
Keynote Lecture, Symposium on Biom. Prop. Sport Shoes & Playing Surfaces, Nijmegen, The Netherlands.
Keynote Lecture, Int. Congress on Biomechanics and Medicine in Swimming, Amsterdam, The Netherlands.
Keynote Lecture, Biannual Conference of the Canadian Society of Biomechanics, Kingston, Ontario.
Keynote Lecture, CASS Meeting, Victoria, British Columbia.
- 1983 Distinguished visitor with guest lecture, Simon Fraser University, Burnaby, British Columbia.
Invited Lecture, Symposium of the Vancouver International Marathon, Vancouver, British Columbia.
Keynote Lecture, Int. Symp. on Sport shoes and Playing Surfaces, University of Calgary, Calgary, Alberta.
Invited Lecture, 4th World Congress of the Int. Society for Prosthetics and Orthotics, London, England.
- 1984 Invited Lecture, 29th Annual Sc. Assembly, Alberta Chapter Col. Family Phys. of Canada, Banff, Alberta.
Invited Lecture, Olympic Colloquium, UCLA, Los Angeles, California.
Invited Lecture, Third Biannual Conference of the Canadian Society for Biomechanics, Winnipeg, Manitoba.
Invited Lecture, 37th Annual Conference on Engineering in Medicine and Biology, Los Angeles, California.
Invited Lecture, International Congress "The Shoe in Sports Activities", Munich, Germany.
- 1985 Lecture, Neuromuscular Optimization of Human Movement. An International Workshop, Zuoz, Switzerland.
Invited Lecture, Fifth Annual Sports Medicine Ski Seminar, Whistler, British Columbia.
Invited Lecture, International Symposium in Sports Medicine, St. Anton, Austria.
Keynote Speaker, 2nd Congress for Orthopaedics in Sports, Berlin, West Germany.
Keynote Speaker, 10th Congress of the International Society for Biomechanics, Umeå, Sweden.
Keynote Speaker, Congress: Applications of Biomechanics, Linköping, Sweden.
- 1986 Invited Speaker, Gatorade Symposium, Phoenix, Arizona.
Invited Speaker, International Symposium in Sports Medicine, St. Christoph, Austria.

- Invited Speaker, Nordic Conference in Sports Traumatology, Turku, Finland.
Invited Speaker, Free University of Amsterdam, The Netherlands.
- 1987 Invited Speaker, International Symposium on Sports Medicine, St. Christoph, Austria.
Invited Speaker, ISPO, Munich, Germany.
Invited Speaker, Institute for Biomedical Engineering, Aachen, Germany.
Invited Speaker, ASME Conference, Boston, Mass.
- 1988 Invited Speaker, OEISS-Symposium, Vienna, Austria.
Invited Speaker, Int. Symposium for Sports Medicine, St. Christoph, Austria.
Keynote Speaker, Seoul Olympic Scientific Congress, Cheonan, South Korea.
Invited Speaker, ASTM, Symposium, Phoenix, Arizona, USA.
- 1989 Keynote Speaker, International Symposium in Sports Medicine, Jerusalem, Israel.
Invited Speaker, Int. Symposium for Sports Medicine, St. Christoph, Austria.
Invited Speaker, Karolinska Institute, University of Stockholm, Sweden.
Wartenweiler Memorial Lecture, International Society of Biomechanics, Congress, Los Angeles, U.S.A.
Invited Speaker, The Royal College of Physicians & Surgeons of Canada, Edmonton, Alberta.
- 1990 Invited Speaker, Colloquium of CTC Lyon, France.
Keynote Speaker, 24th FIMS World Congress on Sports Medicine, Amsterdam, The Netherlands.
Keynote Speaker, International Conference on Athletics, Cologne, FRG.
Invited Symposium Speaker, 1st World Congress on Biomechanics, San Diego, U.S.A.
- 1991 Invited Speaker, International Symposium for Sports Medicine, St. Christoph, Austria;
Keynote Speaker, European Congress on Sport Shoes, Luzern, Switzerland.
Invited Speaker, 2nd IOC World Congress on Sport Sciences, Barcelona, Spain.
- 1992 Nathaniel Gould Foot and Ankle Lecture Series. University of Vermont, Burlington, Vermont, U.S.A.
Invited Speaker. Pre-Olympic Congress, IOC Medical Commission, Lerida, Spain.
Keynote Speaker. Annual Sport Science Meeting, Magglingen, Switzerland.
Invited Speaker. University of Innsbruck, Austria.
- 1993 Invited Speaker. German, Austrian and Swiss Orthop. Congress, Munich, Germany.
Invited Speaker. Neuro-Muscular Research Centre. Boston University, Boston, U.S.A.
Keynote Speaker. US Tennis Court and Track Builders Association, Annual Meeting, Chicago, U.S.A.
- 1994 Invited Speaker. NIH Conference on "Contributions of Biomed. Eng. to Biol. and Med.". Washington, U.S.A.
Keynote Lecturer. XXVth FIMS World Congress of Sports Medicine, Athens, Greece.
Invited Speaker. International Symposium: The Shoe in Sports. Linz, Austria.
Keynote Lecturer. Annual Meeting of the Swiss Ass. for Sports Medicine, La

- Chaux-de-Fonds, Switzerland.
Invited Speaker. 2nd World Congress on Biomechanics. Amsterdam, The Netherlands.
- 1996 Keynote Lecturer. Science in Wintersport. St. Christoph, Austria.
- 1997 Keynote Lecturer. Fourth IOC World Congress on Sport Sciences, Monte Carlo, Monaco.
Keynote Lecturer. The Am. Academy of Podiatric Sports Med. Annual Meeting, Seattle, Washington, USA.
Keynote Lecturer. The British Assoc. of Sport & Exercise Sciences, Annual Meeting, York, UK.
Invited Speaker. International Symposium for Sports Medicine, St. Christoph, Austria.
Invited Speaker. Conference of the European College of Sports Medicine, Copenhagen, Denmark.
- 1998 Invited Speaker. Symposium on running. ACSM, Denver, Colorado, USA.
Keynote Lecturer. 3rd World Congress of Biomechanics. Sapporo, Japan.
Keynote Lecturer. Homecoming: Western States Chiropractic College. Portland, USA.
Keynote Lecturer. Sporting Goods Retailer World Summit. Munich, Germany.
Invited Speaker. North American Conference on Biomechanics. Waterloo, Canada.
- 1999 Keynote Lecturer. Central Japan Orthop. Surgery and Traumatology, 92nd Annual Meeting, Kyoto, Japan.
Keynote Lecturer. GOTS Annual Meeting, Munich, Germany.
Invited Symposium Keynote. Sportwissenschaftlicher Hochschultag, Heidelberg, Germany.
Invited Lecturer. Fifth IOC World Congress on Sport Sciences, Sydney, Australia.
Invited Lecturer. Pro Motio, Instructional Course on Biomechanics, Pontresina, Switzerland.
- 2000 Keynote Lecturer. 2nd International Congress on Skiing and Science. Arlberg, Austria.
Keynote Lecturer. Europ. Foot & Ankle Society, Stockholm, Sweden.
- 2001 Keynote Lecturer. Insert & Orthotic Symposium, Munich, Germany.
Keynote Lecturer: ISB Congress, Zürich, Switzerland.
Keynote Lecturer: ECSS Congress, Cologne, Germany.
Keynote Lecturer: PFOA Congress, Miami, USA.
- 2002 Invited Lecturer: 4th World Congress of Biomechanics, Calgary.
- 2003 The Mark L. Zivot Lecture in Podiatric Surgery, Banff, Canada.
Congress Opening Keynote Lecture: ECSS Congress, Salzburg, Austria.
Keynote Lecturer: IOC World Congress, Athens, Greece.
- 2004 Keynote Lecture: The Swiss Orthop. Ass. Instructional Course in Biomechanics, Pontresina, Switzerland.
Keynote Lecture 1: Joint Meeting Swiss Foot & Ankle Soc. and Swiss Soc Sports Med. Locarno, Switzerland.
Keynote Lecture 2: Joint Meeting Swiss Foot & Ankle Soc. and Swiss Soc Sports

- Med. Locarno, Switzerland.
- 2005 Keynote Lecture: Geoffrey Dyson Award Lecture, Annual Congr. Int. Soc. of Biomechanics in Sports, Ottawa.
 Keynote Lecture: Forum *VIVA50PLUS*, St. Gallen.
 Keynote Lecture: Asian-Pacific Society of Biomechanics Annual Meeting, Taipei, Taiwan.
 Keynote Lecture: Annual Meeting of the Korean Society of Biomechanics, Busan, Korea.
 Keynote Lecture: 7th Symposium on Footwear Biomechanics, Cleveland, Ohio, USA.
- 2006 Keynote Lecture: Int. Shoe Symposium, Polytechnical University, Hongkong, China.
 Keynote Lecture: ISBS Congress Salzburg, Austria.
 Keynote Lecture: Maxnet Aging Conference, Virginia, USA.
 Keynote Lecture: 5th World Congress on Biomechanics, Munich, Germany.
 Keynote Lecture: Forum Alpbach (Alpacher Technologieggespräche).
 Keynote Lecture: IVO / APO Congress, Basel, Switzerland.
 Keynote Lecture: PFA 48th Annual Symposium, Atlanta, USA.
- 2007 Keynote Lecture: International Symposium on Computer Science in Sport, Calgary, Canada.
 Keynote Lecture: Jim Hay Award Lecture, American Society of Biomechanics, Stanford, California.
 Keynote Lecture: Australasian Conference of Science and Medicine in Sport, Adelaide, Australia.
 Keynote Lecture: Shanghai FIMS International Forum, Sport University, Shanghai, China.
 Keynote Lecture: 4th ICSS Congress (International Congress on Science in Skiing), St. Christoph, Austria.
- 2008 Invited Lectures: University of Innsbruck, Austria.
 Invited Lectures: University of Vienna, Austria.
- 2009 Invited Lectures: University of Melbourne, Australia.
 Keynote Lecture: ISBS Congress Cape Town, Africa.
 Invited Lectures: Universidade Lusófona, Lisbon.
 Invited Lecture: University of Innsbruck, Austria, Alumni Reunion.
 Keynote Lecture: ISEA World Congress, Vienna, Austria.
 Keynote Lecture: i-FAB World Congress, Seattle, USA.
- 2010 Keynote Lecture: BioPed National Conference, Toronto, Canada.
 Keynote Lecture: CFPM, National Congress, Toronto, Canada.
 Keynote Lecture: UKSEM Congress, London UK.
 Keynote Lecture: Sports-Medicine-Conference, Shaffordshire, UK.
 Keynote Lecture: International Congress on Science and Skiing, Salzburg, Austria.
- 2011 Keynote Lecture: BioPed Annual Meeting, Orthotics and Shoes – Aligning the Skeleton, Toronto, Canada.
 Keynote Lecture: Staffordshire Conference on Clinical Biomechanics,

- Shoes and Orthotics – Aligning the Skeleton. Staffordshire, UK.
 Keynote Lecture: Strength & Conditioning Conference, Orthotics. SFU, Vancouver.
- Invited Lecture: adidas Research Day, Herzogenaurach, Germany.
 Invited Lecture: Opening Lecture of the CSSB, Innovative challenges in sports sciences, Berlin, Germany.
 Invited Lecture: UK Association of Sport & Exercise Medicine (UKSEM), Orthotics – what do they do – what do we know, London, UK.
 Keynote Lecture: Can. Fed. of Podiatric Medicine Annual Meeting, Toronto.
- 2012 Keynote Lecture: Annual Congress of Podiatry, Valladolid, Spain. The preferred movement path: Why shoes and orthotics don't change the kinematics
 Invited Speaker: Alberta Intelligence and Innovation at ATB Financial. Impact of orthotics in terms of skeletal alignment, Canmore, Alberta, Canada.
- 2013 Keynote Lecture: Conference: Connective Tissues in Sport Medicine, University of Ulm. Barefoot running.
 Keynote Lecture: Langer Summer School, Manchester, UK. Impact forces and foot pronation.
 Keynote Lecture: Int. Soc. Of Biomechanics, ISB. Brazil. Muybridge Lecture.
 Keynote Lecture: Qatar Running Symposium. Doha Qatar. Variables to distinguish between subjects in running.
- 2014 Keynote Lecture: Pedorthic Association Annual Meeting, Niagara, Canada.
 Orthotics – what do we know – where do we go?
 Keynote Lecture: IOC World Congress, Monaco. The evolution of footwear and its role in prevention of running injuries.
 Keynote Lecture: Western Foot and Ankle Conference, Anaheim, USA. Effects of orthotics on human biomechanics.
 Keynote Lecture: International Running Symposium, Calgary, Canada. Career Lecture.
- 2015 Keynote Lecture: Running injuries and running shoes, Runner's World Forum, ISPO, February 4-5. Munich, Germany.
 Keynote Lecture: The concept of the preferred movement path. adidas. Innovation Leadership meeting. May 16-17. San Diego, USA.
 Keynote Lecture: Running Injuries - a paradigm shift. Sportwissenschaftlicher Hochschultag, DSV. September 30 – October 2. Mainz, Germany.
 Keynote Lecture: Die kleinen Muskeln im Sprunggelenk – Bedeutung für Training und Verletzungen. University College Physiotherapy. September 25. Landquart, Switzerland.
- 2016 Invited Lecture: Pronation and Shoes. A New Paradigm. May 10. Memphis, USA.
 Invited Lecture: Muscle Tuning and Running Shoes. December 7. Annecy, France.
 Keynote Lecture: Science and the HPL. December 9. Calgary, Canada.

PUBLICATIONS

Symbols used in the list of references

R	=	refereed journals
C	=	refereed conference proceedings
K	=	keynote in refereed conference proceedings
B	=	books
E	=	editor of a book
P	=	chapters in books
N	=	non-refereed publications
D	=	dissertation (Ph.D. Thesis)

The translations of the French and German titles is attempting to represent the meaning of the title.

1971

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| 1 | R | Nigg, B.M. Über die Wirkung der Eigenrotation (Effet) bei fliegenden Bällen (On the effect of spin in flying balls). <i>Jugend und Sport</i> , 6: 284-285, 1971. |
| 2 | R | Nigg, B.M. Reflexions sur l'angle opimal du depart au lancer du poid (On the angle of release in shot put). <i>Kinanthropologie</i> , 3/4: 257-264, 1971. |

1972

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| 3 | R | Nigg, B.M. and Waser, J. Überlegungen und Experimente zu verschiedenen Hochsprungtests (Theoretical considerations and experiments with various high jump tests). <i>Jugend und Sport</i> , 11: 383-386, 1972. |
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1973

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| 4 | R | Nigg, B.M., Neukomm, P.A. and Waser, J. Messungen im Weitsprung an Weltklassespringern (Measurements with world class athletes in long jump). <i>Leistungssport</i> , 4: 265-271, 1973. |
| 5 | R | Nigg, B.M., Neukomm, P.A., ad Waser, J. Messungen im Weitsprung an Weltklassespringern (Experimental results on high performance athletes in long jump). <i>Jugend und Sport</i> , 2: 62-66, 1973. (Similar publication as (4) derived from same experiments). |
| 6 | R | Hoerler, E. and Nigg, B.M. Überlegungen zum Aufsatzsprung beim Wasserspringen (On the take-off bounce in diving). <i>Leistungssport</i> , 4: 272-279, 1973. |
| 7 | R | Nigg, B.M., Hegner, J. and Wartenweiler, J. Experimentelle biomechanische Untersuchungen über den Aufsatzsprung beim Wasserspringen (Experimental biomechanical study on the take-off bounce in diving). <i>Jugend und Sport</i> , 11: 385-386, 1973. (Similar publication as (6) derived from same experiments). |
| 8 | R | Nigg, B.M. and Neukomm, P.A. Erschütterungsmessungen beim Skifahren (Impact acceleration measurements in alpine skiing). <i>Med. Welt</i> , 11: 1883-1885, 1973. |
| 9 | B | Nigg. Biomechanik, ausgewählte Kapitel (Selected topics in biomechanics). ETH Zürich, 1973. |
| 10 | N | Nigg, B.M., Neukomm, P.A. and Waser, J. Messungen im Weitsprung an Weltklassespringern (Experimental assessment of high performance long jumpers). <i>Die Körpererziehung</i> , 9: 1973. (Similar publication as (4) derived from same experiments). |

- 11 N Nigg, B.M. and Neukomm, P.A. Erschütterungsmessungen im Skifahren (Load analysis in alpine skiing). Proceedings of the Int. Conference "Skifahren und Sicherheit, Davos, Switzerland, 1973.
- 1974**
- 12 R Nigg, B.M., Neukomm, P.A. and Unold, E. Biomechanik und Sport (Biomechanics and sport). *Orthopäde*, 3: 140-147, 1974.
- 13 R Waser, J., Neeser, K., Nigg, B.M. and Wartenweiler, J. Test zur Klassifizierung der Schwimmer (Test for classification of swimmers). *Jugend und Sport*, 6: 215-217, 1974.
- 14 R Nigg, B.M., Röthlin, K. and Wartenweiler, J. Biomechanische Messungen beim Speerwerfen (Biomechanical measurements in javelin throwing). *Jugend und Sport*, 6: 218-220, 1974.
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- 16 C Nigg, B.M. Analysis of twisting and turning movements. In: *Biomechanics IV*. R.C. Nelson and C.A. Morehouse (eds). University Park Press, Baltimore: 279-283, 1974.
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- 18 B Nigg, B.M. Sprung -Springen -Sprünge (Jump -jumping -jumps). Juris Verlag, Zürich, 1974.
- 19 N Nigg, B.M., Neukomm, P.A., Spirig, J. and Unold, E. Die Belastung des menschlichen Bewegungsapparates bei sportlicher Betätigung (Load on the musculo-skeletal system in various sport activities). *NZZ, Forschung und Technik*, 466: 79-82, 1974.
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- 20 D Nigg, B.M. Untersuchung über das menschliche Gleichgewichtsverhalten (Analysis of the human behaviour in the quasi-static equilibrium). Diss. ETH Zürich. Nr. 5630, 1975.
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- 30 C Nigg, B.M., Eberle, G., Frei, D. and Segesser, B. Schuheinlagen (Shoe inserts). *Proceedings of Int. Biomechanics Symposium*, Zürich: 85-98, 1976.
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- 46 B Nigg, B.M. Biomechanique (Biomechanics). Magglingen, 1978.
- 47 P Nigg, B.M. Biomechanische Grundlagen (Introduction to Biomechanics). In: Turnen und Sport in der Schule, Band 1, Theorie. K. Egger (ed). Magglingen: 62-72, 1978.
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- 49 N Nigg, B.M. Sportboden -Sportschuh (Sport surface -sport shoe). *Schweiz Sportmode*, 3: 13-14, 1978.
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- 58 N Nigg, B.M. Quantifying load on the human body. *Biomechanics*, 12: 636, 1980.
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- comparison of three different types of arch support). *Z. Orthop.*, 120: 34-39, 1982.
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COLLABORATION WITH INDUSTRY:

- | | |
|--------|---|
| Adidas | Co-operation in the development and testing of new sport shoe concepts. Results were implemented in new sport shoe concepts. Ongoing co-operation since 1975. |
|--------|---|

ASA	Co-operation with the goal to improve the performance of Canadian alpine skiers. Co-operation 2005-2007.
Bauerfeind	Development and testing of a new concept of ankle braces. The resulting new ankle brace should go into production in 1996. Co-operation 1993-1996.
Cenalta, Calgary	Assessment of safety in the working environment. Co-operation 1996-1998.
Chiropractic Foundation for Spinal Research	Co-operation with the purpose of understanding the physiological, neurological and mechanical effects of chiropractic treatment. Co-operation 1985-2003.
Ciba Geigy Switzerland	Assessment of the effect of drugs for the treatment of ligaments injuries on changes in gait and locomotion. Co-operation 1978-1981.
CT Edge	Development and testing of new skate blade shapes. Co-operation 2006-2009.
Decathlon France	Development of shoes which allow forefoot ab-adduction during locomotion. Co-operation since 1995.
Department of National Defence and Defence and Civil Institute of Environmental Medicine	Development of more comfortable military boots. Co-operation 1998-2004.
Energy Management Athletics	Product development catapult shoe. Co-operation 2004-2006.
Gerflor	Application of the concept of muscle tuning to point-elastic sport and industrial surfaces. Co-operation 2003-2006.
Head International	Development and testing of new tennis shoe concepts. Co-operation 1996-1998.
Hoffman-La Roche	Development of a telemetry system to quantify mechanical and physiological variables during real activities. Co-operation 1976-1980.
I-generator	Co-operation in product development. Ongoing co-operation since 1996.
International Olympic Committee	Co-operation for research during the Olympic Games. Additionally, development of the IOC-Olympic Prize, and award of \$US 500,000 for outstanding research findings relating to movement, exercise and sport. Ongoing co-operation since 1984.
Kaufman Canada	Development of functional ski boots. Co-operation 1995-1996.
Kingnetics	Development of a new military boot. Co-operation since 2011.
Kolon	Development of hiking boots. Co-operation 2006-2007.
LS Networks (Korea)	Assessment of marketing claims. Co-operation since 2011.
Lululemon	Development and assessment of new bra concepts. Since 2014.
Mars	Co-operation to develop and sponsor the IOC-Olympic Prize. Co-operation 1990-1993.
Masai Barefoot Technology, MBT	Co-operation to develop a new shoe concept using instability as the guiding principle. Ongoing co-operation since 2003.

Mizuno	Co-operation for new product testing. Co-operation 1998-2000.
Mondo International	Development of sport surfaces for high performance sport. Co-operation 1992-2002.
Motion Analysis Corporation, MAC	Development of software to analyse human and animal movement. The software package developed by the Human Performance Laboratory (KINTRAK) is sold world-wide by MAC and is considered the leading software program for motion analysis worldwide. Co-operation 1987-2008.
Merck	Development of factors predicting comfort of insoles. Co-operation since 2012.
Nike	Co-operation in the development and testing of new sport shoe concepts. Results were implemented in new sport shoe concepts for tennis and court shoes. Co-operation between 1981 and 1984 and between 2002 and 2005.
Nordika	Development and testing of new ski boot concepts (Nordica Polaris). Co-operation 1975-1978.
Novel GmbH	Development of criteria for shoe insert/orthotic assessment. Co-operation 2000-2005.
ON	Development and functional understanding of a new running shoe concept. Co-operation since 2011.
Parke-Davis	Co-operation to develop and sponsor the IOC-Olympic Prize. Co-operation 1993-1999.
Pfizer	Co-operation to develop and sponsor the IOC-Olympic Prize. Co-operation 1999-2003.
Porplastic	Development and testing of new point-elastic sport surface concepts. The product developed through this co-operation was used in the sport surfaces installed at the University of Calgary. Co-operation 1983-1990.
Powerdisk	Development and testing of a new concept for storage and return of energy in shoes. Co-operation since 2009.
Robbins Sport Surfaces	Development and testing of new area-elastic sport surface concepts. These concepts are now implemented in new indoor sport surface products sold internationally. Co-operation 1990-1993 and ongoing since 2004.
RJJA	Development and testing of sport surfaces. Ongoing co-operation since 1987.
Scott	Running shoe efficiencies. Ongoing co-operation since 2009.
Shering-Plough (Dr. Scholl)	Co-operation to develop shoe inserts which increase the mobility of elderly people. Development of concepts and testing of prototypes. Co-operation 1994-1996.
Specialized	Development of a method for quantifying bicycle vibrations. Ongoing co-operation since 2009.
Taylor Made	Co-operation to optimize club development and subject specific club selection. Co-operation 2000-2006.
Total Image Fitness	Understanding the functioning of whole body vibration

- 3-M machines. Co-operations since 2011.
Co-operation to develop and sponsor the IOC-Olympic Prize. Co-operation between 1989-1992.

INDUSTRY PROJECTS WITH REPORTS:

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- 4 Luethi, S.M., Unold, E. and Nigg, B.M. Biomechanical aspects of spiked shoes. Reports for ADIDAS, Sport Shoe Company, 1978.
- 5 Luethi, S.M. and Nigg, B.M. Biomechanical analysis of running shoes. Report for ADIDAS, Sport Shoe Company, 1979.
- 6 Luethi, S.M., Nigg, B.M. and Waser, J. Biomechanical analysis of a series of special cushioning running shoes. Report for ADIDAS, Sport Shoe Company, 1979.
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- 18 Nigg, B.M. and Luethi, S.M. The influence of tennis shoes on performance in tennis. Report for NIKE, Sport Shoe Company, 1984.
- 19 Nigg, B.M. Lateral stability of tennis shoes. Report for ADIDAS, Sport Shoe Company, 1985.
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- 22 Nigg, B.M. Biomechanics of tennis shoes -a synthesis. Report for ADIDAS, Sport Shoe Company, 1986.
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Court Cases with Dr. Nigg as a witness

(Underline indicates client represented by Dr. Nigg)

CASE	YEAR	COMMENTS
<u>Avia</u> vs. Nike	1991	Paul McDermott - Hale and Dorr Patent infringement
<u>Peel Board of Education</u> vs. Jack Riley, Adele Riley	1991	Richard H. Shaban - Borden & Elliot Rugby Injury, Shoe & Surface were claimed to have caused the injury
Festian (Graves) vs. <u>Nike</u>	1992	Allan D. Sobel - Rubenstein, Isaacs, Haroutunian and Sobel Hip injury during tennis. Shoe was claimed to have caused the injury
Mehl vs <u>Monsanto</u>	1992	Mark H. Daaleman - Pitney, Hardin, Kip & Szuch Anterior cruciate ligament rupture during football without contact with opponent. Injury was claimed to have occurred because of shoe-surface friction
<u>TEVA Sports Sandals</u>	1993	Robert Litowitz - Finnegan, Henderson, Farabow, Garrett & Dunner (Washington DC) Litigation before International Trade Commission
<u>Rollerblade</u> vs many	1993	Albert L. Underhill - Merchant & Gould (Minneapolis) Patent infringement. Rollerblade claimed that their ventilation concept was used by other products
Bauer vs. <u>Rollerblade</u>	1996	Albert L. Underhill - Merchant & Gould (Minneapolis) Patent infringement. Bauer claimed that Rollerblade used one of their patents
SynTennico, Inc. vs. <u>Southwest Recr. Ind.</u>	1999	John West - Greenbaum Doll & McDonald PLLC Patent infringement. SynTennico claimed that Southwest used one of their patented surfaces

<u>Chesnokov vs. Spectrum Arena</u>	2001	Samuel Pace, Jr. - Dugan, Brinkmann, MagInnis and Pace Tennis injury during an ATP Tournament with claim that loose surface seams were the reason
<u>Karen diPietro vs Farmington Sports Arena</u>	2007	David Hill - Halloran & Sage LLP Ankle injury on carpet during indoor soccer. Shoe-surface interface
<u>Oscar Pistorious vs International Association of Athletics Federation IAAF</u>	2008	Pierre Weiss Energy return of the human leg versus energy return from a prosthesis
<u>Masai Barefoot Technology Class Action</u>	2011	Joren S. Bass - Perkins Coie LLP Identification of scientific support for claims made by MBT about their product
<u>Masai Barefoot Technology Tribunal</u>	2011	Michael Kaylor - LaPointe, Rosenstein, Marchand & Melançon, L.L.P Classification of the MBT shoe as a medical device
<u>Milstein Adelmann</u>	2013	Milstein Adelmann LLP Assessment of some marketing claims of ABEO